

Claims

What is claimed is:

- 5 1. An integrated composite base plate and printed circuit board structure for a data storage device comprising:
 - a base plate;
 - a printed circuit board attached to the base plate and spaced therefrom by a gap; and
 - a first adhesive layer between the printed circuit board and the base plate substantially
- 10 filling the gap and bonding the circuit board and base plate together to form a stiff composite structure for supporting a data storage disc on a drive motor mounted on the base plate.
2. The structure according to claim 1 wherein the base plate has an aperture receiving therethrough at least one component mounted on the printed circuit board.
- 15 3. The structure according to claim 2 further comprising a printed circuit board shield fastened to an underside surface of the printed circuit board by a second adhesive layer between the printed circuit board and the shield.
- 20 4. The structure according to claim 1 wherein the printed circuit board has a connector fastened thereto and the first adhesive layer bonds the connector to the base plate.
5. The structure according to claim 3 wherein an overall thickness of the structure is less than 3.3 mm.
- 25 6. The structure according to claim 5 wherein the base plate has a portion having a thickness of between 0.2 mm and 0.3 mm.

7. An integrated composite base plate and printed circuit board structure for a disc drive comprising:

a base plate;

a printed circuit board attached to the base plate and spaced therefrom by a gap; and

5 a first adhesive layer between the printed circuit board and the base plate substantially filling the gap and bonding the circuit board and base plate together to form a stiff composite structure for supporting a data storage disc on a drive motor mounted on the base plate, wherein the disc drive has an overall form factor of a Type I compact flash card.

10 8. The structure according to claim 1 wherein the base plate has an aperture receiving therethrough at least one component mounted on the printed circuit board.

9. The structure according to claim 2 further comprising a printed circuit board shield fastened to an underside surface of the printed circuit board by a second adhesive layer between
15 the printed circuit board and the shield.

10. The structure according to claim 1 wherein the printed circuit board has a connector fastened thereto and the first adhesive layer bonds the connector to the base plate.

20 11. The structure according to claim 3 wherein an overall thickness of the structure is less than 3.3 mm.

12. The structure according to claim 5 wherein the base plate has a portion having a thickness of between 0.2 mm and 0.3 mm.

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13. A structure having a base plate for supporting a disc drive motor and an actuator in a disc drive comprising:

a printed circuit board assembly; and

5 a bonding means filling a gap between the base plate and the printed circuit board for fastening the printed circuit board assembly to the base and forming a stiff support structure.

14. The structure according to claim 13 wherein the bonding means is a layer of adhesive between the base plate and the printed circuit board.

10 15. The structure according to claim 14 further comprising a printed circuit board shield spaced from the printed circuit board by a gap and another layer of adhesive filling the gap bonding the shield to the printed circuit board.

15 16. The structure according to claim 14 wherein the base plate has an aperture therethrough and said printed circuit board has at least one component projecting into the aperture.

17. The structure according to claim 14 wherein the adhesive is an epoxy adhesive.

20 18. The structure according to claim 15 wherein said layers are epoxy adhesive layers.

19. The structure according to claim 13 wherein the gap is substantially planar and the bonding means is a layer of epoxy that covers a surface of the printed circuit board and surrounds components mounted on the printed circuit board.

25 20. The structure according to claim 19 wherein the base plate has an aperture therethrough receiving one of the components therein.